

Appl. No.: 09/939,956
Filed: August 27, 2001
Page 9

REMARKS

Applicant has added new claims 34 and 35. Claim 34 is the same as claim 13 except that it includes the feature of the adhesive leaving the metal surface substantially free of residue when the polymeric jacket is removed. Claim 35 is the same as claim 1 except that it includes the feature of being substantially free of organosilane compounds. Applicant respectfully submits that these new claims are supported by the specification and requests entry of these amendments.

The present invention is an adhesive comprising polyethylene; a copolymer derived from ethylene and at least one monomer selected from the group consisting of acrylic acid, methacrylic acid, methyl acrylate and ethyl acrylate; and a resin derived from at least one unsaturated C5 hydrocarbon monomer. In one embodiment, the adhesive comprises polyethylene in an amount from about 80 to about 95 percent by weight; ethylene copolymer in an amount from about 3 to about 5 percent by weight; resin in an amount from about 0.2 to about 15 percent by weight; and hindered phenolic antioxidant in an amount from 0 to about 1.0 percent by weight. In another embodiment, the adhesive is substantially free of organosilane compounds. The present invention also includes a cable comprising a metal conductor, a polymeric jacket surrounding said metal conductor, and an adhesive comprising the constituents listed above bonding said metal conductor and said polymer jacket.

Claims 1-33 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Gupta (U.S. Patent No. 4,515,992) in view of the "WINGTACK" Hydrocarbon Resins product data sheet ("WINGTACK"). The Office Action of June 5, 2003 states that Gupta teaches a cable comprising a conductor and a polymeric jacket surrounding the conductor and a polyolefin adhesive bonding the conductor to the polymeric jacket. The Office Action states that Gupta teaches an adhesive system comprising a silane compound and a carrier such as polyethylene which may contain additives such as ethylene acrylic acid (EAA), tackifiers, and hindered phenols. The Office Action further states that Gupta teaches an adhesive with a blend of low-density polyethylene with an ethylene acrylic acid copolymer. The Office Action states that WINGTACK teaches commercially available resins based on C5 hydrocarbons that may be used

Appl. No.: 09/939,956

Filed: August 27, 2001

Page 10

as tackifiers. The Office Action concludes that it would have been obvious to one skilled in the art to modify the adhesive of Gupta by adding a WINGTACK tackifier. Applicant respectfully traverses this rejection.

Gupta describes a cable having a corrosion inhibiting adhesive. Gupta's adhesive comprises a polyfunctional silane compound and can include an extender or carrier such as polyethylene and an adhesive-promoting additive such as ethylene acrylic acid. The polyfunctional silane compound in Gupta reacts with the metallic surface of the conductor to render the metal corrosion-resistant and to promote adhesion. See Gupta, col. 3, lines 2-6. Gupta states that the adhesive composition may also include additional additives such as tackifiers and stabilizers (Gupta, col. 5, lines 6-7) and lists as suitable tackifiers several types of rosins. See Gupta, col. 5, lines 7-17.

One skilled in the art would not be motivated to combine Gupta with WINGTACK to produce the claimed invention. Gupta clearly teaches the use of rosins as the tackifiers that can be used in the corrosion inhibiting adhesive. Gupta does not mention the use of resins such as the resins mentioned in the WINGTACK reference in combination with an ethylene copolymer adhesive. In fact, none of the nine examples of adhesive compositions provided in Gupta contain the three elements of a polyethylene, an ethylene copolymer, *and* a resin. The rosins disclosed by Gupta are tree-based C20 derived resins (see Merck Index, 12th ed., p. 1422-23) and are much different than the resins mentioned in WINGTACK that are based on C5 hydrocarbon monomers. Therefore, one skilled in the art would not have any expectation that the resins mentioned in WINGTACK could be used in place of the rosins disclosed in Gupta for use with polyethylene copolymer adhesives. Therefore, one skilled in the art would not be motivated to use the resins mentioned in WINGTACK in Gupta's adhesive.

Furthermore, even if one skilled in the art were motivated to combine the adhesive in Gupta with WINGTACK, it would not have been expected that an adhesive comprising polyethylene; a copolymer derived from ethylene and at least one monomer selected from the group consisting of acrylic acid, methacrylic acid, methyl acrylate and ethyl acrylate; and a resin

Appl. No.: 09/939,956

Filed: August 27, 2001

Page 11

derived from at least one unsaturated C5 hydrocarbon monomer would form an adhesive bond between the outer conductor and the polymeric jacket having a significant bond peel strength and that leaves the metal conductor substantially free of adhesive residue when the polymeric jacket is removed. In particular, it would not have been expected that the more aggressive adhesive produced by combining the ethylene copolymer adhesive with the resin would overcome the problems in the art and would leave the conductor substantially free of adhesive residue when the polymeric jacket is removed. Accordingly, Applicant respectfully requests withdrawal of the rejection of claims 1-33 based on the combination of Gupta and WINGTACK.

In addition to being patentable for the reasons discussed above, claims 9-10, 21-22 and 27-28 are further patentable over the combination of Gupta and WINGTACK. In particular, Gupta and WINGTACK both fail to disclose an adhesive comprising an ethylene copolymer in an amount from about 3 to about 5 percent by weight. The only guidance provided by the cited references for the amount of ethylene copolymer that can be used is Example 2 of Gupta that discloses the use of 19.2 percent by weight ethylene acrylic acid copolymer, which is much greater than the about 3 to about 5 percent by weight recited in claims 9-10, 21-22 and 27-28. Accordingly, Applicant respectfully submits that claims 9, 10, 21, 22, 27 and 28 are further patentable over the cited references.

Claims 25 and 28 are also further patentable over the cited references. In particular, both Gupta and WINGTACK fail to disclose or suggest an adhesive composition that would produce an adhesive bond between an outer conductor and a polymeric jacket having a 72 hour bond peel strength of at least about 5 lb/in. as set forth in claims 25 and 28. Accordingly, claims 25 and 28 are further patentable over the combination of Gupta and WINGTACK.

Furthermore, claim 34 is further patentable over the combination of Gupta and WINGTACK. As discussed above, one skilled in the art would not have expected that an adhesive comprising polyethylene; a copolymer derived from ethylene and at least one monomer selected from the group consisting of acrylic acid, methacrylic acid, methyl acrylate and ethyl acrylate; and a resin derived from at least one unsaturated C5 hydrocarbon monomer would form

Appl. No.: 09/939,956

Filed: August 27, 2001

Page 12

an adhesive bond between the outer conductor and the polymeric jacket having a consistent peel strength such that the adhesive would leave the conductor substantially free of adhesive residue when the cable jacket is removed from the conductor. Accordingly, Applicant respectfully submits that claim 34 is further patentable over the cited references.

Claim 35 is also further patentable over the combination of Gupta and WINGTACK and recites an adhesive composition that is substantially free of organosilane compounds. Gupta is clearly directed to the use of organosilane compounds in its corrosion inhibiting adhesive. In fact, every example disclosed in Gupta includes an organosilane compound in the adhesive. Accordingly, Applicant respectfully submits that the combination of Gupta and WINGTACK does not disclose or suggest the subject matter of claim 35.

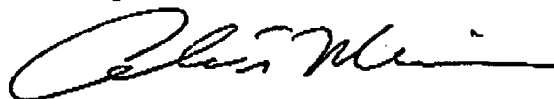
For the reasons provided above, applicant respectfully submits that all the claims are in condition for allowance. Accordingly, Applicant respectfully requests that all rejections be withdrawn and that a Notice of Allowance be issued in due course. If any minor informalities need to be addressed, the Examiner is directed to contact the undersigned attorney by telephone to facilitate prosecution of this case.

It is not believed that extensions of time or fees for net addition of claims are required, beyond those that may otherwise be provided for in documents accompanying this paper. However, in the event that additional extensions of time are necessary to allow consideration of this paper, such extensions are hereby petitioned under 37 CFR § 1.136(a), and any fee required

Appl. No.: 09/939,956
Filed: August 27, 2001
Page 13

therefore (including fees for net addition of claims) is hereby authorized to be charged to Deposit Account No. 16-0605.

Respectfully submitted,



Andrew T. Meunier
Registration No. 40,726

Customer No. 00826
ALSTON & BIRD LLP
Bank of America Plaza
101 South Tryon Street, Suite 4000
Charlotte, NC 28280-4000
Tel Atlanta Office (404) 881-7000
Fax Atlanta Office (404) 881-7777

CERTIFICATION OF FACSIMILE TRANSMISSION

I hereby certify that this paper is being facsimile transmitted to the US Patent and Trademark Office at Fax No. (703) 872-9306 on the date shown below.

Teresa Wells

Date